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**CLAIMS:**

1. A method of determining infection in a human by, or exposure of a human to, a mycobacterium which expresses ESAT-6 comprising:

(i) contacting a population of T cells from said human with the peptide represented by SEQ ID NO:1 and, optionally, one or more further peptides represented by SEQ. ID. NOs. 2 to 11 and

(ii) determining *in vitro* whether the T cells of said T cell population recognise said peptide(s).

2. Use of the peptide represented by SEQ ID NO:1 and, optionally, one or more further peptides represented by SEQ. ID. NOs: 2 to 11, for the preparation of a means for use in determining in a human infection by, or exposure to, a mycobacterium which expresses ESAT-6, said method comprising determining whether T cells of said human recognise said peptide(s).

3. A method or use according to claim 1 or claim 2 wherein a peptide panel is employed consisting of, in addition to the peptide represented by SEQ. ID NO:1, one or more peptides selected from the peptides represented by SEQ. ID. NOs. 2 to 11.

4. A method or use according to claim 3 wherein at least the peptides represented by SEQ. ID. NOs. 1 to 8 are employed.

5. A method or use according to claim 4 wherein one or more further peptides are employed selected from the peptides represented by SEQ. ID. NOs. 9, 10 and 11.

6. A method or use according to any one of claims 1 to 5 wherein any of said peptides is substituted by an analogue which can bind a T cell receptor which recognises the peptide.

7. A method or use as claimed in any one of claims 1 to 5 wherein any of said peptides is

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substituted by a peptide analogue which is at least 70% homologous, preferably at least 80% homologous, more preferably at least 90% homologous, to the entire corresponding substituted peptide and which retains the ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

8. A method or use as claimed in claims 1 to 5 wherein any of said peptides is substituted by a peptide analogue which has one or more deletions at the N-terminus and/or C-terminus and which retains the ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

9. A method or use as claimed in any one of claims 1 to 5 and 8 wherein any of said peptides is substituted by a peptide analogue which has one or more conservative substitutions compared to the corresponding substituted peptide and which retains the ability to be recognised by T cells of a T cell population which recognise the corresponding substituted peptide.

10. A method or use according to any one of the preceding claims in which the recognition of the peptide(s) by the T cells is determined by determining secretion of a cytokine from the T cells.

11. A method or use according to claim 10 in which IFN- $\gamma$  secretion from the T cells is determined.

12. A method or use according to claim 11 in which IFN- $\gamma$  secretion from the T cells is determined by allowing secreted IFN- $\gamma$  to bind to an immobilised antibody specific to the cytokine and then determining the presence of antibody/cytokine complex.

13. A method or use according to any one of the preceding claims in which the T cells are freshly isolated *ex vivo* cells from peripheral blood.

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14. A method or use according to any one of claims 1 to 12 in which the T cells are pre-cultured *in vitro* with the peptide(s).

15. A method or use according to any one of the preceding claims in which the mycobacterium is *M. tuberculosis* or *M. bovis*.

16. A kit for carrying out a method or use according to any one of the preceding claims comprising a peptide panel as defined in any one of claims 3 to 5, or any one of claims 6 to 9 as dependent on claims 3 to 5, and optionally a means to detect the recognition of a peptide by the T cells.

17. A kit according to claim 16 which includes an antibody to IFN- $\gamma$ .

18. A kit according to claim 17 wherein said antibody is immobilised on a solid support and which optionally also includes a means to detect any antibody/IFN- $\gamma$  complex.

19. Use of one or more polynucleotides capable of expressing in human cells peptide or peptides in accordance with any one of claims 1 to 9 for the preparation of a means for use in determining in a human infection by, or exposure to, a mycobacterium which expresses ESAT-6, said method comprising determining whether T cells of said human recognise said peptide(s).

20. A kit for carrying out a use according to claim 19 comprising one or more polynucleotides capable of expressing in human cells a peptide panel as defined in any one of claims 3 to 5, or claims 6 to 9 as dependent on claims 3 to 5.

21. A pharmaceutical composition comprising a peptide panel as defined in any one of claims 3 to 5, or claims 6 to 9 as dependent on claims 3 to 5, or one or more polynucleotides capable of expressing the peptides of said panel in human cells together with a pharmaceutically acceptable carrier or diluent.

22. A method of diagnosing infection in a human by, or exposure of a human to, a

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mycobacterium which expresses ESAT-6 comprising:

(i) contacting a population of T cells from said human with a panel of peptides represented by SEQ. ID. Nos. 1 to 8, wherein said T cells are freshly isolated *ex vivo* cells from peripheral blood, and

(ii) determining *in vitro* whether T cells of said T cell population show a recognition response to said peptides by determining IFN- $\gamma$  secretion from the T cells.

23. A method as claimed in claim 22 wherein said panel is expanded to additionally include one or more further peptides selected from the peptides of SEQ. ID. NOs. 9 to 11.

24. A method as claimed in claim 22 or claim 23 wherein one or more of said peptides is substituted by an analogue as defined in any one of claims 6 to 9. \*

25. A method or use as claimed in any one of claims 3 to 9 and 22 to 24 wherein said peptides are pooled.

26. A method as claimed in any one of claims 1 to 9 and 22 to 25 wherein presence of a mycobacterium which expresses ESAT-6 is determined in a suspected healthy contact who has been exposed to said mycobacterium.